

# **DOCK-LIKE AUTOMATIC FLUID RECYCLE DEVICE**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

**[0001]** The present invention relates to a dock-like automatic fluid recycle device, and more particularly to a device that guides water flow downstream for power generation and has a lower cistern to retain water which is then pumped upward to an upper cistern for a new electric generation cycle.

### **2. Description of Related Art**

**[0002]** A conventional construction of hydraulic pump power generator is a dam across a watercourse mainly. The dam obstructs the river, and upstream river comes into a reservoir. Next, the water stored in the reservoir drains into the power generator and drives the generator to generate electric power. Although this achieves the objective of electric power generation, being used only one time for this kind of power generator reduces the utility rate of water.

**[0003]** Furthermore, there is not enough water to generate electric power during low water days, because the water is not recycled. It causes to be short of electric power.

**[0004]** Last, thermal power has many problems that attack environmental protection. People shall exert to prevent the pollution of thermal power.

**[0005]** To overcome the shortcomings, the present invention tends to provide a fluid recycle device to mitigate the aforementioned problems.

## **SUMMARY OF THE INVENTION**

**[0006]** In order to solve the aforementioned problems of the conventional arts, a dock-like automatic fluid recycle device is designed

meticulously. On the basis of inventor's practice according to the work, the present invention is useful, and it can solve the problems and limits of the conventional arts.

[0007] A primary objective of the present invention is to provide a dock-like automatic fluid recycle device having basins ranked along an inclined plane as a ladder. Each of these basins allows water flow downstream, and the device has a lower cistern to retain water for a high efficient electric generation cycle.

[0008] To attain the above-stated object, in a dock-like automatic fluid recycle device having an upper cistern, an outlet, a plurality of basin, a plurality of transmission device, a plurality of pump, a generator, a lower cistern and a water pipe. The basins are ranked along an inclined plane as a ladder. Each basin has an automatic water gate on the right side and connects a pump in the lower cistern. Each of the pumps is driven by a corresponding transmission device, and connects the upper cistern by the water pipe. The highest basin connects the upper cistern by the outlet, and the lower port of the outlet has a generator. The lower cistern is installed under the lowest basin.

[0009] The operation of the present invention of the dock-like automatic fluid recycle device is illustrated as follow. First, water in the upper cistern flows through the outlet, and drives the generator to generate electric power. When water streams into the highest basin and brings the water level difference, the corresponding floating plate moves up and down with the water level, and the screw, connected the said floating plate, drives the corresponding transmission shaft and subsequently an corresponding hydraulic pump starts to work. Then, the hydraulic pump drives the corresponding gearbox and flywheel to pump water by the transmission shaft, and the water flows through the water pipe into the upper cistern. When the water level of the highest basin rises to an applicable height, the water flows through the automatic water gate into the middle basin. Similarly, when the water level of the middle basin or the lowest basin rises to an applicable height, the water also flows into the lowest basin or the lower cistern respectively. At least, the pump in the lower cistern pumps all

the water, flowed into the lower cistern, through the water pipe into the upper cistern, and it completes an electric generation cycle of the present invention.

**[0010]** The present invention has improvements as follow. First, the present invention can prevent water flows downstream into the lower cistern and damages the lower cistern because the basins been dock-like are ranked along an inclined plane as a ladder. Moreover, the present invention can pump water to the upper cistern efficiently and achieve an electric generation cycle, because each dock-like basin has a pump connected the lower cistern and the power is generated by a corresponding floating plate, moves up and down with the water level, to drive the pumps with a corresponding transmission device.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0011]** The invention will be better understood and other advantages will become apparent on reading the following description, given by way of unlimited example and by virtue of the appended drawing, in which:

**[0012]** Figure 1 is a schematic view of a dock-like automatic fluid recycle device in accordance with the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0013]** With reference to Figure 1, a dock-like automatic fluid recycle device in accordance with the present invention includes an upper cistern 1, an outlet 2, a plurality of basin 3, a plurality of transmission device 4, a plurality of pump 5, a generator 6, a lower cistern 7 and a water pipe 8, and each said part of the present invention assembles as follow.

**[0014]** The upper cistern 1, a reservoir or a cistern, is installed on the top, and connects to the outlet 2 and the water pipe 8.

**[0015]** The outlet 2, a conduit, drains water from the upper cistern 1 to the basin 3, and the lower port of the outlet 2 has the generator 6.

[0016] The basins 3 are ranked along an inclined plane one by one as a ladder. Each basin 3 has an automatic water gate 31 on the right side and a pump 5 in one of the lower cistern 7. The highest basin 3 connects the upper cistern 1 by the outlet 2.

[0017] Each of the transmission device 4, comprised a floating plate 41, a screw 42, a transmission shaft 43, a gearbox 45, a flywheel 46, and an oil pressure pump 47, transfers the potential energy of water to mechanical energy. The floating plate 41, sunk in the water of the basins 3, connects the transmission shaft 43 with the screw 42. The transmission shaft 43, installed at the center of each transmission device 4, drives the hydraulic pump 47, and the flywheel 46 transmits the power, produced by the hydraulic pump 47, to the gearbox 45.

[0018] Each of the pumps 5 is driven by a corresponding gearbox 45 of transmission device 4, and connects the upper cistern 1 by the water pipe 8. The transmission device 4 and the corresponding pump 5 constitute the power apparatus of the present invention to pump water.

[0019] The generator 6, installed the lower port of the outlet 2, is a device which converts water flow into electrical power.

[0020] The lower cistern 7, installed under the lowest basin 3, stores the water drains from the lowest basin 3.

[0021] The water pipe 8 connects the pumps 5 and the upper cistern 1. Each of the pumps 5 drains the water from the lower cistern 7, and the water flows along the water pipe 8 to the upper cistern 1.

[0022] At the center of each transmission device 4 is a transmission shaft 43. The transmission shaft 43 connects the screw 42, and they transmit mechanic energy between a floating plate 41, a gearbox 45, a flywheel 46 and a

hydraulic pump 47. The transmission device 4 and the corresponding pump 5 constitute the power apparatus of the present invention to pump water.

[0023] With reference to Figure 1 also, following illustrates operation of the present invention. First, let the water in the upper cistern 1 flows through the outlet 2, and drives the generator 6 to generate electric power. When water streams into the highest basin 3 and brings the water level difference, the corresponding floating plate 41 moves up and down with the water level, and the screw 42, connected the said floating plate 41, drives the corresponding transmission shaft 43 and subsequently an corresponding hydraulic pump 47 starts to work. Then, the hydraulic pump 47 drives the corresponding gearbox 45 and flywheel 46 to pump water by the transmission shaft 43, and the water flows through the water pipe 8 into the upper cistern 1. When the water level of the highest basin 3 rises to an applicable height, the water flows through the automatic water gate 31 into the middle basin 3. Similarly, when the water level of the middle basin 3 or the lowest basin 3 rises to an applicable height, the water also flows into the lowest basin 3 or the lower cistern 7 respectively. At least, the pump 5 in the lower cistern 7 pumps all the water, flowed into the lower cistern 7, through the water pipe 8 into the upper cistern 1, and it completes an electric generation cycle of the present invention.

[0024] It is to be understood, however, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.